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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,438	08/15/2003	Roger Moulton	SOU747/4-8US	2478

7590 12/13/2005  
Thomas W. Adams  
Renner, Otto, Boisselle & Sklar, L.L.P.  
Nineteenth Floor  
1621 Euclid Avenue  
Cleveland, OH 44115

EXAMINER

OH, TAYLOR V

ART UNIT	PAPER NUMBER
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1625

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/642,438

Applicant(s)

MOULTON ET AL.

Examiner

Taylor Victor Oh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

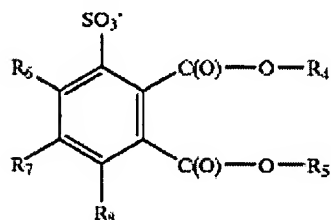
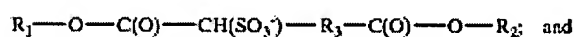
**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## Restriction and Election

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-13, 16-17, 20-52, and 56-59 drawn to an ionic liquid composition containing a cation having more than 4 carbon atoms and an anion selected from the group consisting of



, classified in class 252, subclass 364.

- II. Claims 1-15, and 18-19 drawn to an ionic liquid composition containing catalyst, classified in class 502, subclasses 127 and 150.
- III. Claim 53 drawn to a hydrocarbon fuel composition containing an ionic liquid, classified in class 44, subclass 268.
- IV. Claim 54-55 drawn to a polymer composition containing an ionic liquid, classified in class 252, subclass 182.12.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of

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operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the invention of Group I is directed to the ionic liquid composition containing the cation having more than 4 carbon atoms and the anion containing carboxylate compounds, whereas the invention of group II is directed to the ionic liquid composition containing catalyst. However, the invention of Group II can be practiced with another materially different product as shown in Imai et al (US 4,827,072), in which dehydrogenation catalyst containing a platinum group metal has been used for dehydrogenation process, which is not involved in using any ionic liquid composition containing the cation having more than 4 carbon atoms and the anion containing carboxylate compounds. Therefore, in the instant case, they are unrelated to each other; they are two different inventions.

Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the invention of Group I is directed to the ionic liquid composition containing the cation having more than 4 carbon atoms and the anion containing carboxylate compounds, whereas the invention of group III is directed to the hydrocarbon fuel composition containing the ionic liquid. However, the invention of Group III can be practiced with another materially different product as shown in Scalliet et al (US 5,788,721), in which a fuel composition has water, hydrocarbon, and a combustible nonaqueous liquid, which is not involved in using any ionic liquid

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composition containing the cation having more than 4 carbon atoms and the anion containing carboxylate compounds. Therefore, in the instant case, they are unrelated to each other; they are two different inventions.

Inventions I and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the invention of Group I is directed to the ionic liquid composition containing the cation having more than 4 carbon atoms and the anion containing carboxylate compounds, whereas the invention of group IV is directed to the polymer composition containing an ionic liquid. However, the invention of Group IV can be practiced with another materially different product as shown in Geriach et al (US 6,207,769), in which the polymer composition comprises a polymer matrix a siloxane – containing additive, which is not involved in using any ionic liquid composition containing the cation having more than 4 carbon atoms and the anion containing carboxylate compounds. Therefore, in the instant case, they are unrelated to each other; they are two different inventions.

Inventions III and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the invention of Group III is directed to the hydrocarbon fuel composition containing the ionic liquid, whereas the invention of group IV is directed to

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the polymer composition containing the ionic liquid. However, the inventions of Group III and Group IV are unrelated to each other because the polymer composition has no relationship with the fuel composition as shown in Scalliet et al (US 5,788,721) in which the fuel composition has water, hydrocarbon, and a combustible nonaqueous liquid, which is not involved in using any polymer composition. Therefore, in the instant case, they are two different inventions.

Inventions II and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the invention of Group II is directed to the ionic liquid composition containing catalyst, whereas the invention of group IV is directed to the polymer composition containing the ionic liquid. However, the inventions of Group II and Group IV are unrelated to each other because the catalyst composition has no relationship with the polymer composition as shown in Geriach et al (US 6,207,769), in which the polymer composition comprises a polymer matrix a siloxane –containing additive, which is not involved in using any catalyst liquid composition containing the cation having more than 4 carbon atoms and the anion containing carboxylate compounds.

Therefore, in the instant case, they are two different inventions.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, III, or IV and Group IV is not required for Group III, or IV restriction for examination purposes as indicated is proper.

A telephone call was made to Doug McClellan on 12/9/05 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

\*\*\* *Taylor V. Oh*  
*12/9/05*